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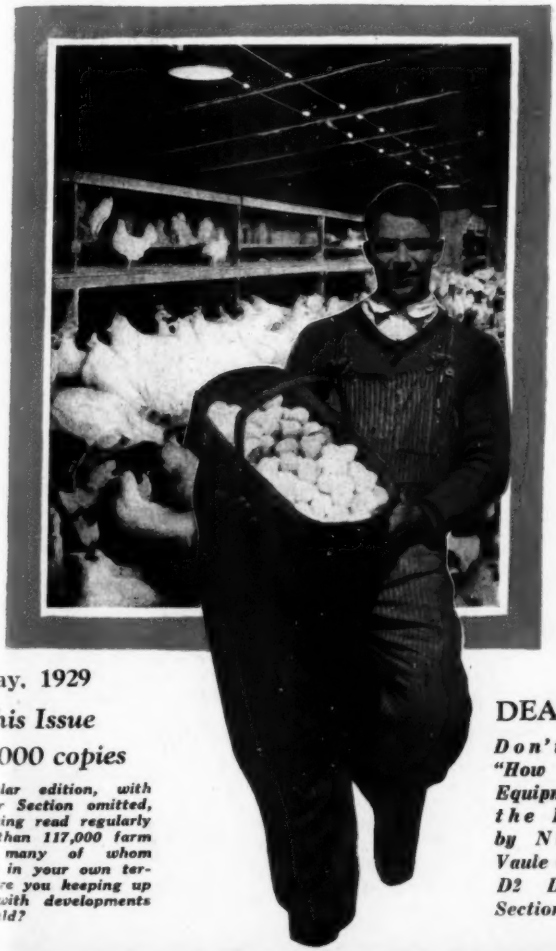
· · DEALER EDITION · ·

Electricity on the Farm



May, 1929

This Issue

126,000 copies

The regular edition, with the Dealer Section omitted, is now being read regularly by more than 117,000 farm families, many of whom likely are in your own territory. Are you keeping up to date with developments in this field?

DEALERS

Don't miss "How to Sell Equipment to the Farmer," by Norman Vaule on Page D2 Dealer Section.

You have time for things you *like* to do, when you cook on a Hotpoint automatic electric range.

In May . . . you'll appreciate this easier way to cook

HOT WATER *Electrically*

for your dairy, your washing, dishwashing and a host of other uses. A Hotpoint electric water heater will prove a great help. Ask your electric company for full information.

THOUSANDS of farm wives all over the country are enjoying the greater convenience and freedom that Hotpoint automatic electric cookery brings. Instead of long hours in the kitchen you can attend to your flowers or your garden—knowing that the next meal is being cooked perfectly while you're *free*.

Now, meals are prepared without watching. Vegetables and fruits are cooked the waterless way, yet do not burn. And the oven keeps at exactly the heat you wish all during the roasting or baking. Merely turn a switch *any* time, and you're ready to cook. No wood or coal to bother about; no ashes; no soot; no blackened pots and pans to scour—*ever*.

No other electric range in all the world is just like the modern Hotpoint. It is surprisingly fast. It is most economical. And no other has the practically indestructible Hotpoint CALROD electric heating element. Ask your electric company to explain the many advantages of Hotpoint automatic electric cookery. There's a Hotpoint automatic electric range for every purse and purpose.

Hotpoint

EDISON ELECTRIC APPLIANCE CO., Inc.
5646 W. Taylor St. Chicago, Illinois
A GENERAL ELECTRIC ORGANIZATION

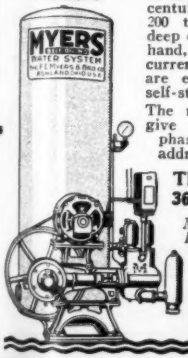
World's Largest Manufacturer of Electric Ranges and Household Electric Heating Appliances

When You Think of Water ~~ Think of MYERS

Clean, sparkling, fresh water at the turn of a tap—in kitchen, bath and laundry—in barns and feed lots—for lawn and garden—for fire protection! It makes any home a better place in which to live. It means less work, better health, greater comfort. And you can have it—easily—at low cost!

MYERS
Self-Oiling Water Systems
A REGISTERED TRADE NAME

FIG. 2510



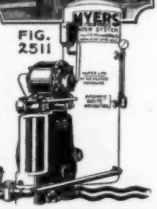
A complete line, backed by over half a century's experience. Capacities from 200 to 10,000 gallons per hour. For deep or shallow wells. For operation by hand, windmill, gas engine or electric current. Myers Electric Water Systems are especially convenient—self-starting, self-stopping, self-oiling.

The nearest Myers dealer will gladly give you dependable counsel on any phase of water service. Write for his address, together with our free booklet.

The F. E. MYERS & BRO. CO.
360 Orange St., Ashland, Ohio

Makers for over 50 Years of MYERS Pumps for Every Purpose. Hay Tools and Door Hangers

FIG. 2511



Electricity on the Farm

Vol. 2 MAY 1929 No. 5

We accept advertising only from concerns we believe to be absolutely reliable. Readers are requested to notify us promptly of any failure on the part of an advertiser to live up to the standards of service promised in these pages, whereupon we will immediately take suitable action.

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How to Cook BETTER *and enjoy it* MORE

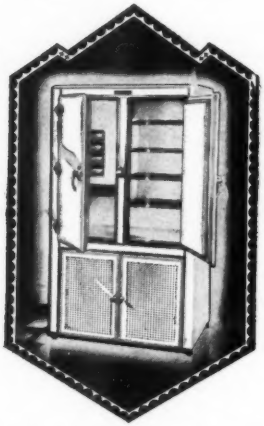
Use ELECTRICITY . . . and a MONARCH. It's "Speed-Oven" brings quick action and low current cost. The automatic heat control insures perfect baking—without care or attention. The built in kitchen heater (on some models) is a real convenience. You have a choice of white, Sunshine-Yellow, or Nile-Green enamel body, to add a bright spot in your kitchen. See them at your electric light company, or write for a booklet.

"Is it practical for me to cook by electricity" is the title of a book we want to send you. Just write to . . .

MALLEABLE IRON RANGE CO., 400 LAKE ST., BEAVER DAM, WIS.

Monarch
ELECTRIC RANGE

Amazing New Silence



Distinguishes the 1929

KELVINATOR

Among All Electric Refrigerators

PRODUCT of a company concentrating for 15 years on automatic refrigeration, the New *Silent* Kelvinator stands today not only an improvement of this great line, but a genuine achievement in domestic electric refrigeration.

It is so positively silent in operation that it is difficult to tell, even while standing close, whether it is running.

Wholly automatic, Kelvinator demands no regulation or attention on your part. It rapidly freezes desserts, salads, and ice cubes, while maintaining scientifically correct temperatures to preserve food and improve its flavor.

No need to wait to enjoy a modern automatic Kelvinator in your home. Buy it *now* on Kelvinator's attractive ReDisCo monthly budget plan, and note the savings and benefits it brings to your home.

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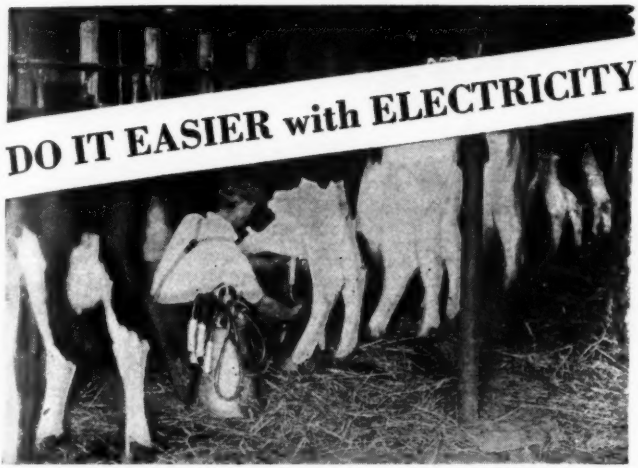
Facts Every Dairyman Should Know About the Kelvinator Milk Cooler

Kelvinator presents a revolutionary idea for the quick cooling and storing of milk in its new electric milk-cooling cabinet. ¶ This submergible-type cooler is designed to meet a wide application to farm and dairy requirements. ¶ This is a sturdy, well-constructed, steel-clad cabinet insulated with pure corkboard, built to give long life. ¶Outlets are provided for operation of an aerator and a circulation pump can be furnished at slight additional charge. ¶ Full information on request.



DO IT EASIER with ELECTRICITY

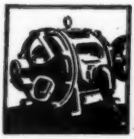
ELECTRIC milkers make such an easy task of milking. They enable one man to easily do the work of two — and to milk the cows cleaner and better in the bargain.

This is but one of the many ways in which a Westinghouse motor helps the farmer with his daily chores. A Westinghouse motor furnishes the ideal drive for electric milkers and other similar labor-savers. Its speed is constant. It requires no attention when in operation. It's always on the job at the throw of a switch.

No matter what chore you're doing, electricity will do it easier and quicker. Whether it's pumping, grinding, sawing, churning, sweeping, ironing or cooking — the tireless strength of electricity will save you time and effort at every turn.

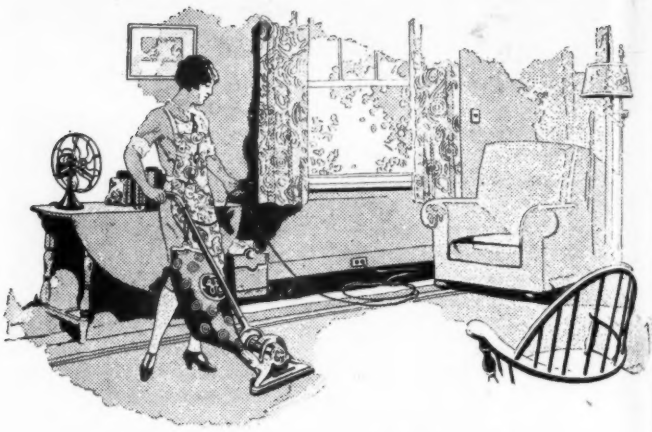
WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY

Offices in all Principal Cities Representatives Everywhere



Electric motors, electric ranges, electric home appliances of all kinds . . . when they carry the Westinghouse trade-mark you know they are good for years and years of hard service.

Westinghouse



Woman's Work . .

Woman's work is never done —certainly not if she lives on a farm! From early till late she cooks, cleans, and mends. In her "spare time" she is expected to take care of the chickens and the garden. Rarely has she even a few precious moments of leisure.

And if she sweeps and washes by main strength she is wearing herself out for three cents an hour!

For that slight cost, electricity will run a vacuum cleaner, a washing machine, or a refrigerator or fan. For a little more it will operate electric cooking and heating devices.

Save her time and strength with electric servants which bear the G-E monogram, your assurance of economy and good service.

If you are located on or near an electric power line, ask your power company for complete information concerning the possible uses of electricity on your farm.

Tune in on the General Electric Special Weekly Farm Program over G-E Stations WGY (Schenectady), KOA (Denver), KGO (Oakland). In addition, every Saturday evening at 8 P.M., Eastern Standard Time, the "General Electric Hour" is broadcast over a nation-wide chain.

95-633D

GENERAL ELECTRIC

General Electric Company, Schenectady, N. Y., Sales Offices in Principal Cities

Electricity on the Farm

Vol. 2 MAY, 1929 No. 5

Little Things That Count

A job that takes but half an hour is usually considered insignificant. But is it always so?

Take for instance the sharpening of a mower sickle: if brought to town for sharpening, where it can be properly done in about thirty minutes on a power driven emery wheel, it may mean the loss of a half day in the field just when time is most valuable. Last summer the writer of this editorial was giving a hand at haying on a mid-western farm. The clover was thick and one of the mowers jammed frequently—so frequently that it was stopped and the sickle sent to town, about two miles away, for sharpening. The farm hand taking it found the town shop already busy on an emergency job and he was obliged to wait his turn for nearly two hours. Add to this the time required to take the sickle from the field to town and back again, and a total of over three hours was required for the task.

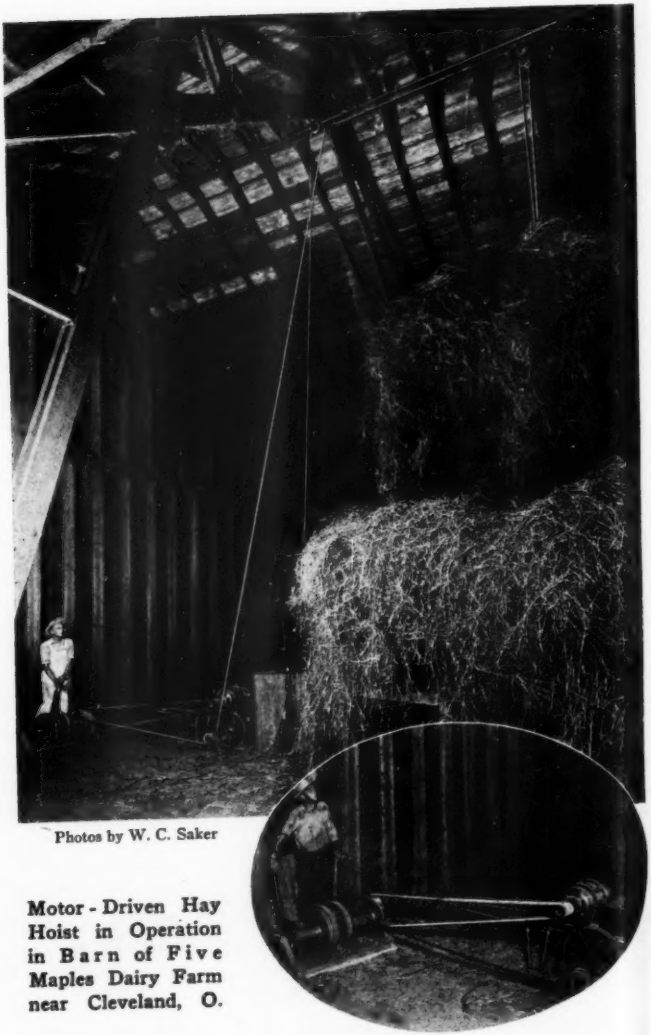
Taking into account the loss of the man's services for half a day, as well as the enforced idleness of the team and the general slowing down of the haying, it's a safe bet that this little "insignificant" task cost the farmer well over six dollars.

* * *

A motor driven sickle grinder in the farm shop will eliminate delays, and trips to and from town, to say nothing of what the motor operated hand drill, grindstone, forge blower, etc., can do.

* * *

It is in simplifying and speeding up just such little jobs as the one described above that electric power on the farm contributes so much toward increasing efficiency in farm operations.



Photos by W. C. Saker

Motor - Driven Hay Hoist in Operation in Barn of Five Maples Dairy Farm near Cleveland, O.

Make Hay
While the Hoist Hums

BY E. R. MEACHAM

ON our northern farms where the haying season begins in June and lasts often through a second cutting of alfalfa in September, the peak load for horse labor is spread over a considerable period. But it is a peak none the less, and very often the hay fork demands an extra horse or team and housing and feed for them throughout all the year.

That is why some of the men with electric motors on their farms are using them to lift hay into their barns. They do it with power hoists, big winding drums controlled by levers that operate clutch and brake. Some hoists have two drums, one to lift the hay, the other to pull the fork back to the wagon. With the single drum hoist you can return the fork with a counter balance heavy enough to draw the carrier back.

Harry L. Garver, investigator for the Washington Committee on the Relation of Electricity to Agriculture, reporting the results of his studies of electric hay hoists, says that where the hoist is used in small or moderate sized barns he thinks the double drum hoist has practically no advantage over the single. Of course where the distances are great, it is not always practical to return the fork with a counter weight. For those places the double drum hoist seems best.

Two, three, and five horsepower motors are operating these hoists successfully in various parts of the country. The heavy pull on the motor comes for just a part of a minute while lifting the hay. All the rest of the time the load is running along the track or the empty fork and carrier are coming back. During those few seconds the motor can carry double its rated load without harm.

The power demands will vary, of course, with the weight and the speed at which the lifting is done. A hoist run by a small motor may not lift the hay from the load as rapidly as a team would, but the actual lifting takes only about a quarter of the time for unloading. The hoists act much more promptly, causes fewer delays, and the fork comes back more quickly and easily than when it is pulled back by hand, making the whole operation faster than unloading with horses.

Mr. Garver reports some interesting experiences with motor driven hoists on farms near Burlington, Washington. In one case a five H.P. motor furnished power to a hoist carrying 2 single harpoon forks. By setting these forks near each end of the load, says Mr. Garver, the entire top half went up at the first pull, and the second lift cleared the hayrack where the loads averaged about a ton. With this outfit a small crew put in from 20 to 30 loads a day.

At another farm a 3 H.P. motor on a similar hoist unloaded 40 tons a day. This crew hauled the hay to the barn on 4 wagons.

The cost of these hoists varies. Good hoists can be bought at from $60.00 to $125.00, depending on the size and the number of special features desired.

Their cost of operation is uniformly low. Reports of tests made the country over show an average current consumption of about a third of a kilowatt hour a ton.

I have a friend, Anton Muellenbach, who lives on a 26 acre farm near Fond du Lac, Wisconsin. He has a single drum hoist mounted on a platform nine feet above the floor at one side of the driveway of his barn.

"I have a motor to cut my corn stover," he told me. "I thought I

might as well make it lift my hay, too. I bought this hoist from a picture. I saw a lot of advertisements before I found one I liked too. But this one seemed just right, and sure enough it is."

It seemed like a highly specialized piece of machinery for so small a farm, but Mr. Muellenbach knew what he was about when he bought it.

"Just come here a minute."

We were standing on the platform with the hoist and motor.

"I have only two horses. I come in with a load of hay and my horses are right down there. I can't get them out to hitch on the fork."

I looked in the direction of his pointing finger. His driveway comes into the barn almost on the level, but on the other side of the barn the ground drops away 10 feet so there is no door at the far end of the driveway, and it is so narrow that he cannot get the horses out past the load. When he drives in those horses have to stay there until he can back them out again.

"Well, what did you do before you put in the hoist?" I asked.

"I had to keep three horses, one to pull in the hay."

"You actually kept a horse all year to use on the hay fork?" I asked incredulously.

Oh, I used him for other work like discing in the spring, but I don't need three horses on 26 acres except to get my hay in. I usually buy some standing hay and plan to put up about 25 tons.

"For the last few years I've been borrowing a horse from a neighbor. But last year he went to town to work in a factory, so I had to do something before haying. Since I had all the power I need in this 3 H.P. motor, I decided on a hoist because you know a horse eats all the year round, but this thing only when I work it. And then it takes just about nothing. I never can see it in my bill."

This Double Drum Hoist Sits on the Driveway Floor.

Fast Work with Motor Driven Hoist

Mr. B. F. Sheridan, a neighbor on the other side of Fond du Lac, has been using a power hoist for a good many years.

"We got our hoist in 1921," he told me. "That year our barn burned, and when we built the new barn we put the hoist in. The first two years we ran it with a gas engine because this electric line did not come through until 1923. After that we began to use a motor."

"You had always used horses before, I suppose."

"Yes, but you know how it is," said Mr. Sheridan. "You've got to have either an extra team or at least an extra horse or you've got to take a team off the wagon every time you bring in a load, and it makes a lot of bother."

"How about speed?"

"We can take off a load of hay in just half the time with a hoist that we can with a horse fork. You see we have a good place to compare the two, for we still use the old method in the barn on one of our places. If we'd just put in a hoist and used it year after year, we'd forget how much difference there was. We couldn't tell exactly whether it was better or worse. But lots of times we unload for half a day over at the other place, and then come down here for half a day and unload here."

So through all of these years

they have used both methods and have had a chance to note the differences.

"I know a good many times I've been setting the fork down at this barn, when I wished I was up at the other with a power hoist. It's 70 feet from this driveway to the end of the barn; and it's mighty hard work to pull the carrier and big six prong grapple fork back with the trip rope."

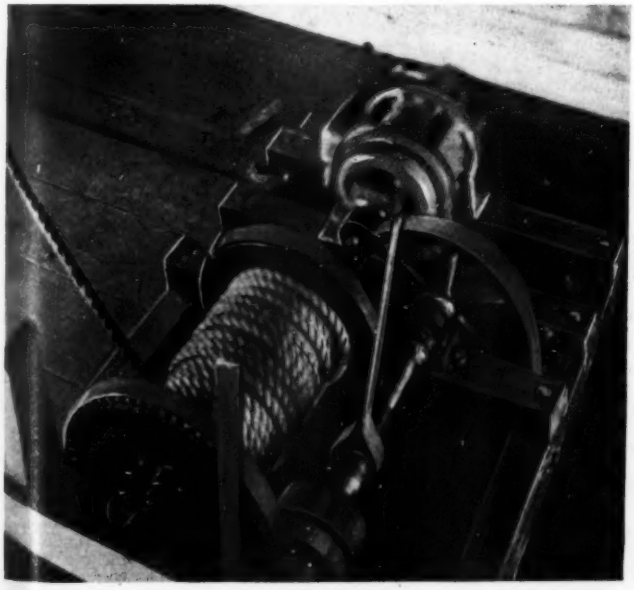
"Do you operate your hoist from the load?" I asked.

"No, we don't. We find that a man has all he wants to do handling our big fork. We turn the control of the hoist over to someone else who gives it his undivided attention. It isn't hard work, you know. Any dependable boy can do it. But to be of the greatest help, he must be alert to obey the wishes of the man on the load. When we're short of help, my sister has run the hoist."

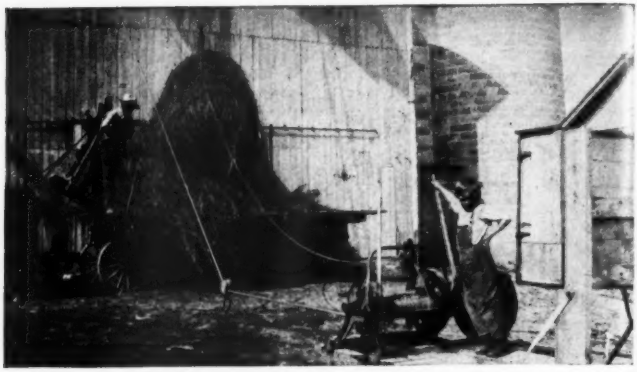
Besides the increased speed and the saving of horses, the hoist gives better control of the fork at all times. A team often pulls the fork beyond the place you want it to drop, in spite of all the yelling you can do. Or the driver may turn back before the fork is over the proper bent. Then he either has to pull it the rest of the way by hand, or you must be content to trip it where it is. But with the hoist you have no such difficulty. An alert operator with a double drum hoist can stop the carrier anywhere instantly, and if it is not spotted correctly, he can easily pull it in either direction.

Aids in Setting Fork

"It helps in setting the fork, too," said Mr. Sheridan. "We find that we have to keep the big grapple suspended until it is ready to plunge into the hay. With someone driving a team, turning them around at the barn and haul-



Mr. Muellenbach's Motor Is Geared Directly to His Hoist.



Any Dependable Boy Can Do It.

ing in the stack that lies on the ground, it often happens that the fork comes down so far it rests on the load. It is almost impossible to handle when it lies in the hay. We find that we have to pull it up again by hand before we can set it properly. But the brake on the hoist makes it easy to stop the fork and hold it swinging just clear of the load.

Cost of Power to Operate Hoist a Small Item

"When the hay is loose and light, there is an advantage in being able to stop the fork just as it starts up, so as to force the prongs together and avoid losing part of the forkful. You can't do that with horses. They won't pull a load part way up and hold it. They either go or they don't go."

"Does it cost very much to run it," I asked, curious for his opinion on operation costs.

"No, the cost is so low that it's of no importance," Mr. Sheridan answered. "I did know at one time. We watched the meter. But it wasn't much and I've even forgotten what we did find."

Dependable Help

Anyone that bought a farm during the war has an idea of what a struggle I had. I was very much in debt but decided to put in electric power much against the advice of bankers, etc. Am I sorry? I should say not, I am glad I risked all for the most dependable help one can have. Electric powers is the most reliable and inexpensive service one can have. I have a milk machine, water pump, emery wheel, washing machine, iron and even the sausage grinder with electric power. Electricity is certainly wonderful and no one should hesitate about putting it in their homes. It pays for itself and it is the most satisfactory "hired help" one can have.—CLAUDE HETRICK, NELSON, WIS.

Solves the Help Problem

I have lived on the old home farm all my life. During the war I invested in more land, and when deflation came I was hard hit—coming at last to a foreclosure of my old home. In redeeming it since that time electricity has been one of the chief factors in making it go. Electricity just made so much difference that my wife and I could get along without steady "hired help" there-by being as independent so to say, making the years of redeeming the old home a comparatively pleasant time, besides the satisfaction of our success.—A. JANSON, PIERZ, MINN.

Dairy Sterilizers Bring

More Money for Less Labor

By J. C. Scott,
Agriculturist.

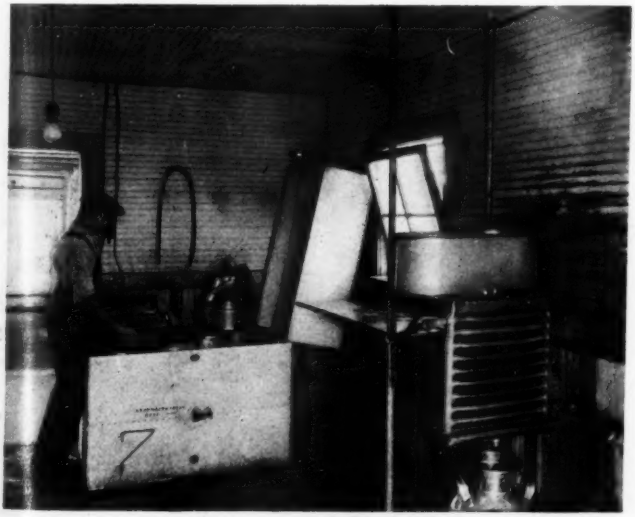
A DAIRYMAN can pay for a sterilizer in a very short time by the difference he gets in price between ordinary milk and better milk in Western Washington.

Here is the way Mr. W. M. Winther, Manager of the Western Dairy Products Company, of Seattle, Washington, outlines the relation between high grade milk and better prices paid to the producer.

"The average price (varying a little, depending on distance of hauling) paid to the producer by our company for whole milk (3.8% butter fat test) is $2.15, $2.25, $2.30, $2.35 and $2.45 per hundred pounds. Aside from the variation due to butterfat content, the difference in price is based entirely upon quality of milk. In other words, milk containing a high bacteria content cannot command the better prices.

"The $2.45 is paid for the milk that goes onto the city market," continued Mr. Winther, "and the other prices are for milk used for manufacturing all kind of dairy products.

"We have installed the very



The Electric Sterilizer and Milk Cooler That Help Mr. Knutzen Reduce His Bacteria Count.

latest machinery and carry a mighty big investment in buildings and facilities to provide the very highest grade of market milk, butter, ice cream, powdered milk, etc., that can be manufactured.

"But, better products, which we are always striving to put out depend very largely upon the producer of the raw milk. And in order to encourage the production of higher grade milk, we are getting away from the old custom of paying the same price to the man who produces poor milk as to the one who supplies good milk.

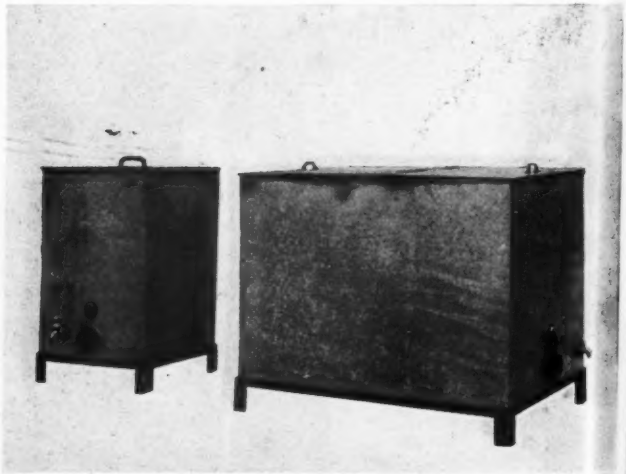
"It isn't any of our business how they produce high quality milk, but we know that it is impossible to get real good milk from a farm where they do not thoroughly wash all milk utensils with plenty of hot water and sterilize them with steam or boiling water. A teakettle full of boiling water is not enough to keep down the bacteria content.

"I want you talk to Mr. A. H. Rishoi, our dairy technician on this matter, as he has some very definite ideas along this line."

Mr. Rishoi, former professor in the dairy department at the State College of Washington, who has had much experience in manufacturing products from milk from a great number of farms, said, when questioned about producing good milk: "We are strong for sterilization by water or steam. There is absolutely no substitute for it. And a great plenty of hot water is needed for washing, too."

When leaving the large plant of the Western Dairy Products Co. I began to realize the truth of Mr. Winthers' statement that "a sterilizer will pay for itself in a very short time." It doesn't take much figuring to see how a dairyman producing 30,000 lbs. of milk a month, could increase his monthly check by $90 if he increased the price of his milk from $2.15 per hundred to $2.45 per hundred.

However, all dairymen do not sell whole milk. There are many who separate and sell only the cream. Some time ago I talked with Mr. W. C. Rhodefer, living near Sequim, Washington, who was getting 10 cents per pound of



Two Popular Sized Sterilizers.

The small sterilizer is equipped with one 600 watt element, and the other one, which will hold 12 cases of milk bottles at one time, is equipped with two 600 watt electric insert heaters.

butter fat more for his cream than some of his neighbors, and all selling to the same creamery.

This difference in price received for better cream increased his income by about $1.70 a day, $51 per month, $612 per year, although he milks only 18 cows most of the time.

Expensive equipment is not necessary to produce high grade cream, according to Mr. Rhodefer. He called my attention to his very inexpensive barn, constructed of poles and rough lumber. The floor and stanchions are of wood. To be sure it is kept clean, whitewashed inside, but of very ordinary construction.

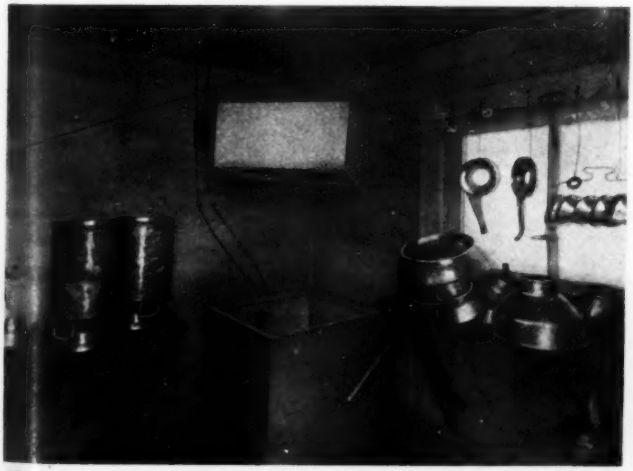
"The electric sterilizer is the most important thing on the farm when it comes to getting the big price for cream," said Mr. Rhodefer. "In fact, I was never able to get No. 1 sweet cream price before installing the sterilizer, even though I washed udders and did everything else except sterilize. Now I sterilize, which is very easy by electricity, and get No. 1 sweet cream price all the time.

'I wouldn't try to get along without an electric sterilizer because it is the means of cutting down so much work and at the same time getting better results."

Oscar Jorgensen, R. F. D. No. 6, Mount Vernon, Washington, who has for several years retailed milk in Mount Vernon, has several cases of milk bottles and other utensils to wash and steril ize. The small sterilizer and water heater was too small for this job, so Mr. Jorgensen installed a 50 gallon domestic hot water tank, covered with heat insulating material, and equipped with a 600 watt insert electric heater. It is used 24 hours a day and on a water heating rate for current. This outfit furnishes plenty of hot water for washing twice a day.

The sterilizing is done with an electric steam sterilizer, large enough to hold 12 cases of bottles at one time. The sterilizer is copper-lined, insulated to keep from wasting heat, and has two 600 watt insert heaters, which also go on the water heating rate.

In speaking of his experience with sterilizers, Mr. Jorgensen (*Continued on page* 40)



Simple Electric Sterilizer on Dairy Farm of W. C. Rhodefer, Near Sequim, Washington.

Taking the Arm Aches Out of Shearing

By TRUMAN E. HIENTON,
Department of Agricultural Engineering,
Agricultural Experiment Station,
Purdue University.

"OFF with the old and on with the new" may be approximately applied to any farm, on which sheep are raised, during late April, May, or early June. For during any of these months, a change of that kind takes place in the appearance of the farm flock as the sheep shears or power shearing machine removes the wool which has grown on the bodies of the sheep during the past year. The drab, brown color of their bodies becomes that of a snowy white until weather and other agencies again discolor them.

For many years the hand operated sheep shears were the only implement used for separating the fleece from the body of the animal which had grown it. Then the introduction of the shearing machine, turned by hand power, speeded up the rate at which the producer of the fleece was separated from it.

Finally the motor-driven machine increased the rate of shearing even farther with the result that only one half as much time was required as in the case of hand shearing.

At the present time, there are a number of reliable manufacturers who make motor-driven sheep shearing machines. These machines are equipped with a ¼-hp. motor and cost at the highest rate not more than 3 cents per hour to operate.

Motorizing the Hand Machine

Shearing machines which have been operated by hand power may be converted into motor-driven machines by one method shown in an accompanying illustration. A direct connection was made from the shaft of the back-geared motor to that of the shearing machine but because of excessive speed, belt drive was finally used. The cost to operate the machine in this manner was 2.5 cents per hour. The previous year two boys had been hired to do the same work, alternating in order to rest, and each was paid 30 cents per hour, a total of 60 cents per hour as against 2.5 cents for the motor.

The chief advantages of electric power for operation of sheep-shearing machines are economy, which has been shown, and steadiness of operation. The motor has no muscles to become tired and consequently drives the machine at a steady, even rate, a necessary factor in completing the work of shearing quickly.

Substitute for Hired Girl

I am pleased to receive *'Electricity on the Farm,'* each month and look forward to the day it arrives. In reading it thoroughly many new ideas and uses for electricity are found. I have solved the problem of an economic substitute for domestic help (who, if secured cannot be retained in the rural districts), with these electrical labor saving devices.—MRS. PETER N. LAYTON, FISHKILL, N. Y.

Well! Well!

At the Lincoln County picnic at Vineland the rolling-pin throwing contest was won by Mrs. W. H. Upsall, who threw the rolling-pin sixty-seven feet. Mr. Upsall won the hundred yard dash for married men.—English paper.

Shearing with Hand Power Clippers Which Have Been Connected to a Portable Electric Motor.

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Shearing with Hand Power Clippers Which Have Been Connected to a Portable Electric Motor.

Electric Brooding

By F. A. NORMAN

THE electric brooder with its even, automatically controlled heat held almost entirely under the hover, is the nearest to natures way of brooding. It not only allows the chicks to follow their natural instincts to go under and be surrounded by a protecting body of heat, but also supplies the chicks with the purest air, as there are no fumes or gases.

The time and labor saved in electric brooding is of importance. There is no fuel to handle and the temperature is always just right without extra attention. Time saved can be used in operating more brooders or in other work about the poultry plant or farm. The ease of handling the electric brooder encourages more attention to keeping the brooder house in a sanitary condition. The absence of fire risk in the well constructed electric brooder highly recommends this method of brooding, even if there were no other advantages. In choosing an electric brooder the following points should be considered:

1. *Ventilation*—Provision should be made for adjustable ventilation in order that chicks can be supplied with plenty of fresh air at night when they are all under the hover and so ventilation during the day can be restricted for economy of operation.

2. *Capacity*—At least 7 square inches of floor space per chick must be provided. This means that a 42 inch brooder will care for but 200 chicks, a 56 inch brooder 350 chicks and a 67 inch brooder 500 chicks.

3. *Construction*—The brooder should have long life heating elements, thermostatic control that is easily regulated and with contact points that will not stick. It should be well insulated so as to retain as much heat as possible.

The cost of operating the electric brooder will compare very favorably with any other type brooder. The figures in the table below were secured on a brooder test at the Oregon Agricultural College.

In 1928, in the district around Albany, New York, records were kept on the daily current consumption on four well constructed and insulated brooders. Two brooders were 200 chick size, one was 350 chick size and one 500 chick size. These brooders operated during March, April and May with an average current consumption of 3¼ kw. hrs. per day, or .34 kw. hrs. per chick for the brooding season. Poorly constructed brooders for the same period showed a current consumption as high as 1.34 kw. hrs. per chick.

The poultryman must take advantage of every modern time saver and convenience if he expects to hold his own and make a profit in the face of increasing competition.

Eliminates Drudgery

The electric washer, ironer, vacuum cleaner and water system has done away with heavy drudgery, while the lights, fan, heater, toaster and refrigerator give us real comfort and by saving time over the old system give us opportunity to enjoy our families, the great and wonderful outside world and visit our friends. While I have not all the conveniences one might wish, I hope to some day also have an electric stove.—MRS. H. G. ANDREWS, SPENCER, WIS.

Brooder	Cost per Chick for 8 Weeks—Brooding Period. Fuel	Mortality B. Rocks	Mortality Leghorns	Feed	Total cost per chick
Electric	2.56c	5.2%	8.8%	5.74c	8.30c
Oil	3.34c	8.4%	11.9%	6.08c	9.42c
Coal	2.6c	14.7%	10. %	6.94c	9.54c

Artificial Rain
While the Sun Shines

By H. D. BROWN

CURIOUSLY enough, prolonged periods of drought are welcomed by gardeners who have their crops insured against drought by means of adequate irrigation facilities. It is a universal rule that the most profitable crops are those produced when the ordinary tiller of the soil is unable to grow them. The up to date gardener, however, is prepared to produce crops "out of season" as he realizes that his greatest profit and likewise his greatest pleasure comes from accomplishing that which his less fortunate neighbor is unable to achieve. Crops may be grown "out of season" by utilizing new cultural methods, by growing new and comparatively unknown varieties, or by growing crops which cannot be grown unless special environments are provided. These special environments may be provided by means of greenhouses, hotbeds, or various other kinds of equipment of which irrigation equipment is by no means the least important.

Though irrigation equipment is often very expensive and though it may be needed but two or three times during a season it is known that the water supplied by this means is one of the best agencies for crop insurance. One very successful gardener states that he is able to increase the yield of his vegetables 300 per cent and in addition produce vegetables of much better quality by means of irrigation. Not only does the use of water augment the growers income but it instills confidence in his own ability which no doubt helps him in his other business efforts.

Extent of Use of Irrigation Equipment

Overhead or spray irrigation is practiced in all parts of the United States. It is used for watering lawns, flower gardens, golf greens and market gardens. It is used

Eggplants Grown under Spray Irrigation at Purdue University Gardens, Lafayette, Indiana.

more extensively for intensive crops such as onions, eggplants, lettuce, cabbage, spinach, celery and cauliflower than for crops that are grown on a large scale. In spite of this there are many instances of its profitable use for such crops as potatoes, tomatoes, cucumbers and horseradish. One up-to-date gardener near Springfield, Massachusetts grows several acres of horseradish by the aid of the overhead type of irrigation. By applying water during dry periods he is able to mature fancy marketable roots in one growing season whereas it might otherwise require two seasons.

Although each installation of the overhead system is relatively small there are doubtless several thousands of acres equipped with this type of irrigation in the United States.

Use of Electric Motors

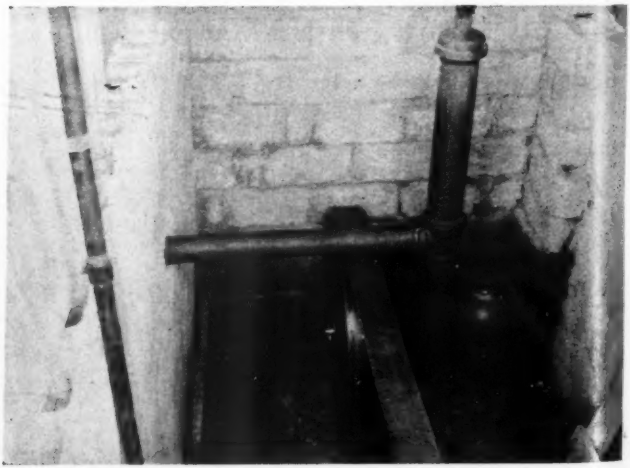
The ease and efficiency of securing the proper application of water at the ideal time is of course highly important to the financial success of any irrigation enterprise. No small part of the success of any irrigation system depends upon the power for operating the pumping equipment. Electric motors furnish one of the most convenient and effective sources of power for this purpose. The source of power is sufficient and constant both day and night and the motors cause a minimum of trouble.

When centrifugal pumps are used for pumping, the motor is connected directly, by means of a shaft, to the pump. Centrifugal pumps may be operated from horizontal or vertical shafts. Two stage pumps are used when it is necessary to draw the water from deep wells. Centrifugal pumps are especially desirable if a large volume of water is needed. They have a low first cost, have few wearing parts and can be fitted onto a pressure irrigation system without the installation of bypasses or relief valves.

Displacement Pumps

When electric motors are used to supply power to displacement pumps it is necessary to make the attachment by means of belt or gear connections. Friction clutches and tight and loose pulleys are

(*Continued on page* 30)



Displacement Pump and Belt Connection Used for Pumping Water by Harry Hohlt at Indianapolis.

Why I Want An Electric Refrigerator

By EVELYN TURNER

WE live on a farm eight miles from town. Refrigeration is our biggest problem. We have tried all kinds; cellar, musty and unsanitary; cave, fifteen feet from the kitchen door; and harvesting ice from a river with the great uncertainty as to the amount and quality of the supply and the increasing difficulty every year of finding enough help to do the job. Our last attempt was an ice route from town but during the warm rainy season with clay roads our refrigerator was often empty.

I sat down and tried to figure whether or not we could afford an electric refrigerator.

These are the points I found had to be considered.

1. Initial cost.
2. Operating cost.
3. Upkeep and depreciation.
4. Time, energy and convenience.
5. Peace of mind (satisfaction).

That last point seems silly but to me it is as important as any of the others.

The initial cost of the refrigerator I would like is about $345.

I got this information from a report of the Rural Electrification Project at Garner, Iowa. They found that eight electric refrigerators used an average of 546 kilowatt hours per year. At our rate for power the operating cost would be about $25 per year. Depreciation on the box 5 per cent and 10 per cent on the unit were figures given by the National Electric Light Association. Assuming the cost of box to be $100, and the unit, $245, these would total about $30 per year.

It was rather difficult to figure repairs. At Ames, Iowa, two refrigerators had an average repair cost of $4 for the year. A manufacturer of electric refrigerators estimates $5 a year for repairs.

When I had added my columns this is the way they looked:

Present System

An ice refrigerator.
A good ice box I can probably sell for $60.
$75 per year for ice and delivery.
An empty ice box four or five times during the year.
Spoiled food.
A musty kitchen twice a week after filling the box.
Peace of mind—here all figures break down. Compare one hot rainy day with no ice

(*Continued on page 32*)

Iced Water Without Ice

Electrical Housekeeping

Conducted by GAIL MEREDITH

Cooking Spring Vegetables

BEFORE long we will be going out into the garden again to thin out the carrot row, and to get a mess of green peas for dinner. Though I am not particularly fond of peas throughout most of the year, their delicate flavor when they are young keeps me faithful to the hoe handle through one planting after another.

The cooking of these spring vegetables is coming in for a lot of attention these days. Everyone seems to agree that the simplest ways are best. Overcooking them spoils their texture, flavor and color. So does boiling them in quarts of water. The new waterless cookery preserves their appearance as well as many soluble food materials.

If you have been drowning out the sugar and boiling away a large part of the volatile flavors from your crisp young vegetables, try this new way some time. Take a fairly heavy dish with a tight cover. Put in about half a cup of water and bring it to a boil. Then put your vegetables in. After ten minutes turn the burner off entirely. If the cover of your dish is really tight, the cooking will be finished in the normal cooking period and there will be scarcely a thimbleful of water left to throw away.

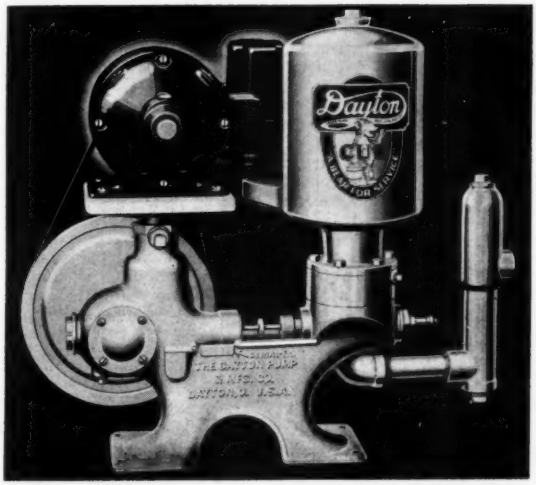
Take carrots, for instance. This sort of cooking makes no end of difference with them. Their flavor is largely bound up with their sugar—and you will cook it away with that sugar, if you cut the carrots up small and cook them to a mush in too much water.

With green peas the water dissolves away some of the protein as well as the flavor.

Practically any vegetable can be cooked this way, but it is true that it fits some better than others. Cabbage and cauliflower have such strong flavor that they are really better if a little of it is boiled away in the water or driven off in steam.

When the spinach and chard begin to come in, you must remember that these leafy green vegetables lose some of their color if they are kept covered tight, and let a little steam escape occasionally for the sake of their appearance.

Since the amounts of vegetables we cook and the ranges we use vary, you will have to check the amount of water and the time for the current to be on for yourself. If you have a very large dish of vegetables, you may need a little more water. If the burner of your



THE DAYTON CUB $65 F.O.B. DAYTON

No other investment will return so much for so little. The "CUB" will give you running water at your kitchen sink—in your bathroom—at convenient faucets in barns and outbuildings—225 gallons per hour, fresh from your well, spring or stream!

The "CUB" is entirely automatic, quiet, self-oiling. It costs only a few cents a day to operate—depending on how much water you use. It is built to give unfailing service month after month without servicing or attention. High quality has made it internationally famous.

The DAYTON "CUB" is the product of pump specialists—builders of a complete line of high grade private water systems of all sizes for deep or shallow wells. No matter how much or little water you use or what the source of your supply, there is a DAYTON system that will exactly meet your requirements. Write for complete descriptions and prices.

Pioneer Manufacturers of Private Water Systems

Dayton WATER Systems

The Dayton Pump & Mfg. Co. Dayton, Ohio

The Dayton Pump & Mfg. Co. Dayton, Ohio.

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EF-5

Please send me complete information and prices on Dayton Water Systems.

Name .....

Address .....

.....

MAKE THE *WATER* DO THE RUNNING

range will not keep the water boiling quite long enough to finish the cooking, you will need to leave it on a little longer. A few trials will show you just what you can depend on.

You could not leave the burner on high and expect to use this waterless method. The careful regulation of the cooking temperature is the secret of its success. Extreme heat would boil the water away long before the food was cooked. There is virtue in this necessity, however. The waterless way provides better food at lower current costs.

Supplanting the Whisk Broom

I DID not realize how much I was coming to depend on my small vacuum cleaner until a friend of mine borrowed it and forgot to return it last Friday.

I'm not the woman so wedded to routine that she'd wash on Monday no matter if it came on Sunday. But I do admit that cleaning on Friday is a pretty fixed habit. I cling to it because on that day at least I'm sure to give the house a pretty thorough going over. And there is nothing like being all clean at once to set up a house—and a housekeeper with a sort of respectable smugness. Doing it Friday gets us all slicked up for Sunday, yet leaves Saturday free for filling up the refrigerator and pantry for the days to come.

So Friday morning found me cleaning as usual with a whiskbroom in my good right hand. I'd forgotten the limitations of a whiskbroom in the months I'd been brandishing a hand cleaner instead.

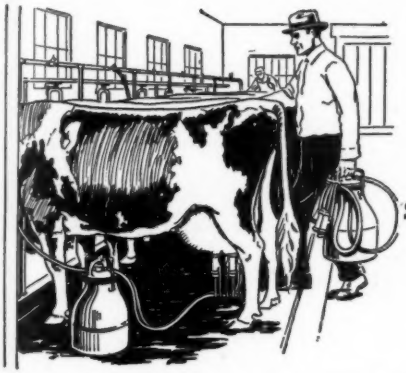
These new vacuum cleaners work just like the big cleaners except that they are small enough to carry in our hands or sling on a strap over our shoulders. They are lighter than an iron, yet have considerable suction. Some of them even blow as well as suck.

They are particularly helpful to the woman who just won't get the attachments of her vacuum cleaner out every day or week. She will put them on a few times a year and go over the walls, the draperies, clean out hot air registers on the radiators, and clean the piano and the window screens, but in between she falls back on the old hand methods and the whiskbroom again.

Now the whiskbroom is a very

Dorothy Likes It for Pillows and Such.

The WONDERFUL NEW . . . . De Laval Magnetic Milker



• • •

Perfect Milking

• • •

Easy Handling

• • •

Simple and Reliable

• • •

Less Power

• • •

Easy Cleaning

ALREADY the De Laval Magnetic Milker is making a great name for itself—users are delighted with it—they say no milker ever approached it in perfection of milking, ease of handling and cleaning, in reliability and satisfaction.

The De Laval Magnetic retains the famous De Laval principle of controlled and uniform pulsations, but accomplishes it with a new and patented application of electro-magnetic force which provides simplicity of construction and installation, requires less power to operate, and gives controlled and uniform pulsations which milk cows in the best possible manner. The new Magnetic is easy to operate, easy to clean, and will give more profit and satisfaction to every cow owner. Made in a variety of sizes for milking one to 1000 or more cows. Can be operated by electric motor or gas engine. Sold on such easy terms it pays for itself while you are using it—send coupon for full information.

Also the New De Laval Utility Milker —For the Low Price Field

A quality milker for the low price field. Units can be used on existing single pipe line installations, or it can be used as a complete outfit. Made in one and two unit sizes for milking one to 20 cows. Sold on easy terms—send coupon for full information and prices.

Two complete lines of De Laval Separators for every need and purse. Send coupon for full information.

The De Laval Separator Co., Dept. 6235
New York, 165 Broadway
Chicago, 600 Jackson Blvd.
San Francisco, 61 Beale St.

Please send me, without obligation, full information on { Milker ☐ Separator ☐ check which

Name .....

Town .....

State .....R. F. D. .....No. Cows.....

respectable tool with an unimpeachable past, but it is run with a tremendous expenditure of elbow grease, and its idea of a thorough cleaning is to brush the dust up into the air and let it fall back again where it will. But this vacuum cleaner gobbles it up and stows it away in its bag to be shaken out and burned when we will.

I use my cleaner every week in the living room. It cleans the pillows and upholstery, the lamp shades and curtains better than any whiskbroom I ever used, and with far less effort. At longer intervals I use it on the mattresses. Perhaps its best trick is getting the cat's hairs off the davenport and picking up the shreds and threads from the floor around the sewing machine.

My neighbor always borrows it to clean her stair carpet. The first time she had it her young daughter brought it back. She came racing into the house shouting enthusiastically:

"I say, Aunt Gail. This is the cream in my coffee for doing those old stairs. It makes cleaning them really fun."

Ice Box Cookies

WHEN our husbands hire help they make every effort to plan the day's work so that the men will not stand around idle, waiting for a new job. And on the rare occasions when we women can get someone in by the day, we know before time just what those extra hands are going to do.

But sometimes I think we aren't quite so clever at getting the most out of our electric equipment. We do not always give it all the jobs it can do for us, and so spread out what the business man calls "our overhead."

I am thinking about refrigerators.

Of course, in buying a refrigerator we are buying first of all a safe storage space for perishable foods. We take that for granted. The thing we come to learn as we live with our refrigerators is that they will take care of lots of food we had never thought of storing before.

A Safe Storage Space for Perishable Foods.

There is a lot of comfort in being able to make up a batch of rolls Saturday morning and serve them hot any time throughout the week. It is just the same way with cookies.

I make up two kinds of ice box cookies at a time. I wrap the long rolls of dough in wax paper, and set them away in a covered dish in the refrigerator. Then I bake a plate of them for Sunday morning breakfast, and serve them now and again throughout the week. Crisp and fragrant, they make an appetizing accompaniment to a dish of sauce for supper.

One of my favorite recipes I got at a cooking school. It is for

Chocolate Pin Wheels

½ cup shortening
⅔ cup sugar
1 egg yolk
½ teaspoon salt
3 tablespoons milk
1½ cups flour
1½ teaspoons baking powder
1 square chocolate
1 teaspoon vanilla

Cream shortening, add sugar, the beaten egg yolk, the milk alter-

Master Motors *do an amazing amount of* Farm Work

Whatever their task may be—they perform it faithfully and well, for Master Motors are built to provide dependable, trouble-free service.

The Master Portable Farm Motor will fill your silo, operate your corn sheller, and perform many other farm chores at a low cost.

Master Guaranteed Motors—Master Portable Farm Motors and Master Grinders and Buffers can be used in many labor and time-saving ways.

Write today for full information.

THE MASTER ELECTRIC COMPANY
DAYTON, OHIO

STOCKS CARRIED IN PRINCIPAL CITIES
More Than 70 Service Stations
MASTER GUARANTEED MOTORS
1/20 TO 10 H.P. Dayton THE MASTER ELECTRIC CO. Ohio Less than 40°

Equipped with gas engine for homes without electricity

Now

a Washing and Ironing Machine Combined

At a price formerly asked for a washing machine alone

WOMEN on the farms—you can now be rid of the drudgery of both washing and ironing, and pay no more than you have been asked for a good washing machine.

The Hurley Machine Company has just perfected this complete laundry unit—the first and only machine of its kind. It combines the Thor Agitator—world's most thorough and efficient speed-type washer—with the New Thor Rotary Iron, that does your ironing in one-fifth the time required by hand.

The Thor name on this new laundry unit is your assurance of lasting satisfaction. Write us for illustrated booklets describing this and other Thor home laundry equipment.

THE HURLEY MACHINE CO.
22nd Street and 54th Avenue
Dept. E-5 Chicago, Ill

nately with the sifted baking powder, flour and salt. Add the vanilla. Divide the dough in two parts. To half of it add the chocolate melted. Roll the white part out in a thin sheet; then roll the chocolate part the same size. Place the chocolate part over the white part and press together. Roll up like a jelly roll. Set in refrigerator for several hours. Cut in thin slices. Bake on a greased cookie pan in 375° oven.

Making Rain

(Continued from page 22)

not needed if electric power is used. All displacement pumps should be equipped with air chambers to act as cushions in regulating the pulsations of the water. They should also be equipped with relief valves or by-passes in the discharge pipes in order to avoid breaking the pumps in case the spray lines should be shut off. Displacement pumps should be double acting if only one or two cylinders are used or single acting if three cylinders are used. The accompanying illustration shows an electric motor driven displacement pump used on the farm of Harry Hohlt at Indianapolis, Indiana. He has thirty acres under irrigation. It is estimated that over 500 acres of land are under the overhead system of irrigation in the gardening section around Indianapolis.

Electric motors are usually turned on and off by the man that operates the irrigation equipment. For greenhouse irrigation it is, however, sometimes advisable to store some water in tanks. These tanks are frequently equipped with float switches which turn the pump motor on or off as the water level falls or rises in the tanks.

Amount of Power Necessary

The amount of power needed depends upon many factors. It is most important that the power and equipment are sufficient at the critical times. Irrigation equipment may be needed constantly during the summer or it may be needed but two or three times. In

general it is seldom necessary to apply more than six inches of water to any area during a season in the Central and Eastern United States. It is usual to provide capacity for one inch of water every seven days under extreme dry and hot weather conditions.

Most overhead installations deliver 60 gallons of water per minute per acre with 30 pounds pressure. This rate gives one inch of water in less than nine hours. Of course proper provision should be made for contemplated additions to the field equipment.

For frost protection it is necessary to operate the sprinklers continuously during the danger period, for successive water applications are not effective in saving the crops. If this use for the system is contemplated it will be necessary to install a larger pumping plant or to limit the crops to be so protected to the acreage that the pump can cover.

In addition to furnishing power for pumping a certain volume of water against a certain pressure (usually 30 to 40 pounds) it is also frequently necessary to supply additional power to lift or force the water to a much higher elevation. For instance it requires approximately 3/10 of a horse power to elevate 60 gallons of water per minute to a height of 10 feet. To raise the water 20 or 30 feet it would require two and three times the 3/10 of a horse power. Tables are usually supplied, by firms which install irrigation equipment, which give the power necessary to elevate different quantities of water to different heights.

Tables may also be secured which give the amount of additional power which must be supplied to overcome the friction of the water in the pipes.

In general the pump should be located as near the source of water as feasible. For instance it is much better to locate the pump near a stream and to force the water to the plot of ground to be irrigated rather than locate the pump at the garden and try to draw the water to the pump through a long pipe line. A

Washes Clothes *in less than 1/3 the time*

With General Electric Motor

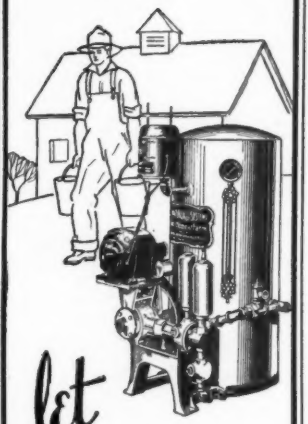
and does *all* the work

ACTUAL tests have demonstrated that this new Thor Agitator Washer will do your whole family washing in less than one-third the time required with a washboard. It does *all* the work. It washes clothes cleaner. And the cost of doing a generous washing is about equal to the price of 2 postage stamps.

Women on the farms — *read that again*! Can you afford to sacrifice your health and lose these precious hours for the sake of a few cents? It's false economy—and it doesn't pay.

We'll gladly send you illustrated booklets describing this, and all, Thor home laundry equipment. Write to

THE HURLEY MACHINE CO.
22nd Street and 54th Avenue
Dept. E-5 Chicago, Ill.



let
a **PAUL** *Water System carry the Water!*

PLENTY of water at a turn of the faucet... *fresh, clean, cool*! Water for kitchen, dairy, barn... for fire protection too. No more back-breaking pumping and carrying. *Increased profits* on live stock will pay for it every year.

The Paul will work for you for a few cents each day! And the first cost is *much lower than you expect.* Use the coupon now and let us recommend the system for your needs.

FORT WAYNE ENGINEERING & MFG. COMPANY
Fort Wayne, Ind.

Pumps and Water Systems — *Water Softeners Heaters*

Ft. Wayne Engineering & Mfg. Co.
***1722 N. Harrison*, Ft. Wayne, Ind.**
Send complete information and prices on Paul Water Systems.

Name_____

Address_____

slight leak below the pump in the system would release the suction and thus stop the flow of water though a bad leak above the pump would have little effect upon the efficiency of the system except for the loss of water and a slight decrease of pressure. Of course pumping equipment must not be located where the plant is likely to be submerged by overflow water.

Large water mains offer less resistance to the flow of water than small mains and this must of course be considered in estimating the amount of power needed and the kind of motor to install. The location of the main water lines depends largely upon the size of the fields and arrangement of nozzle lines. Nozzle lines should not, however, be more than 600 feet in length. Long nozzle lines require a considerable amount of large, expensive pipe which might be used to better advantage as mains. Long nozzle lines are, moreover, more difficult to turn. Short nozzle lines are frequently turned by automatic devices which are operated by water pressure. The water used to operate the turning device is used for irrigation purposes and is not lost.

Electric Refrigerator

(*Continued from page 23*)

supply for 24 hours, during the canning season to — —

New System

An electric refrigerator.
A new refrigerator, $345.
Current $25.
Depreciation $30.
Repairs $5.
A continual, even cooling temperature.
Clean and easily operated.
Peace of mind—a refrigerator always there, running, and easily forgotten about.

As for me and my house, there will be an electric refrigerator. It is the only solution with eight miles of mud roads between us and the nearest supply of ice. An electric refrigerator is being put in our budget as a piece of "advancement," yes indeed, advancement in living.

Cover Title Contest Rules

Every farm family getting this little magazine can now enter these contests for guessing the front cover title, which have become so popular.

You need only fill out the form below or if you don't want to tear the magazine, you can make out your own form on a separate sheet of paper, writing on one side only.

In addition to the $25 cash prize for the best title to this month's front cover, we will pay $5 for each of five titles given honorable mention. The winners will be announced in the July issue.

Here are the rules:

1. **Only farmers or members of the farm family receiving this magazine are eligible.**
2. **Only one title may be submitted.**
3. **Use the form below or write your answers on a plain sheet of paper in similar form.**
4. **Be sure to answer question (a).**
5. **Write plainly and send your suggestion to Title Editor, ELECTRICITY ON THE FARM, 225 West 34th St., New York, before June 1.**

The March Winner

"The telltale of 'fowl' play," Mr. Geo. A. Kronberg, R. D. 1, Wakefield, Mich.

AND the following titles have been selected as the winners of the five-$5 cash prizes:

"A 'fowl deed' causing alarm," Howard I. Sanger, 551 Worcester Rd., Framingham Center, Mass.

"With electric lights and alarm quite near, your fears of burglars disappear," Arnold T. Smith, South Sterling, Pa.

"Electric protection causes thieves' detection," Mrs. R. Reichert, R. 6, Beaver Dam, Wisc.

"When a thief tries to rob an electrified farm, he soon finds himself a cause for alarm," Mrs. E. G. Misner, 221 Cornell St., Ithaca.

"The sack is filled, But all for naught; The electric bellrings, The thief is caught." Ester L. Bayles, Merrimac, Wisc.

My Title for May front cover picture is.....

.....

.....

.....

.....

.....

(a) Type of Radio Power (mark X after the one you now have):

1. All Electric (A-C).....3. Dry Cells .....

2. Battery Eliminator .....4. We have no radio.....

Name .....

Address .....

Iowa Incubator Tests

By FRANKLIN J. ZINK

"IN the spring a farmer's fancy lightly turns to thoughts of baby chicks," if I may be allowed to paraphrase the poet's words. However, thoughts of baby chicks are not exactly light and passing, for they carry with them real responsibilities.

Hatching with electric incubator has certain advantages over purchasing chicks from a commercial hatchery.

1. The cash outlay is less when chicks are hatched at home.
2. Hatching the eggs produced on one's own farm insures the purity of one's stock.
3. Hatching at home guards against diseases which may be brought to the farm with commercially hatched chicks.

If then you are to incubate chicks on your own farm, you must decide what type of incubator to use and you will find that the electric machines have many advantages over oil burned incubators.

1. Perhaps the greatest advantage is the elimination of the fire hazard. Many oil machines have caused very serious farm fires.
2. Electric incubators require less labor and attention and entirely do away with the handling of kerosene and the cleaning of lamps.
3. Since electricity provides a clean heat without odor, there is no objection to operating an electric incubator right in the house.
4. There is also no tendency to dry out the air, or use up the oxygen, as an oil lamp does.
5. In many cases the electric heat is more evenly distributed throughout the incubator.
6. In some cases the cost of operating electric machines may be slightly more than that of oil machines, but if there is a difference it is more than made up in the freedom from worry and the lessening of labor.

First hand information was ob-

Incubators Used on Iowa Project

Egg Capacity of Machine	Location of Machine When Operated	Season	Kw. Hr. Energy Consumption per 100 Egg Incubated	Percentage of Hatch of Fertile Eggs	No. of Hatches
270	Enclosed Porch	1927	20.9	87.5	1
270	Enclosed Porch	1928	20.0	81.7	2
300	Upstairs Room Unheated	1927	21.1	87.1	4
300	Upstairs Room Unheated	1928	19.0	81.8	3
300	Concrete Pump and Service Building	1927	21.5	80.6*	3
300	"	1928	27.7[1]	86.0	1
600	Basement	1927	20.5	73.6	2
600	Basement	1928	22.2	73.0	1
300	Basement	1926	21.3	No Record	3
100	Upstairs Bedroom	1927	26	69.0	2

* Two hatches.
[1] An early season hatch.

Average, 21.52 k.w.h.
Average, 80.56%

The PRATER MILL
(HAMMER TYPE)

5 H.P. $75

Save Money~ Grind Feed at Home!

Guaranteed
1. To be entirely satisfactory.
2. To use a minimum amount of current or power.
3. To give a high quality of grinding year after year.

PRATER MILL is the handy all-around farm mill. Two to five horse power in size—a giant in long distance, high quality performance.

Will grind small grains automatically and roughages as fast as you can feed them.

Poultrymen are saving one-third of mash cost by grinding the best whole grains with a Prater Farm Mill. Dairymen, baby beef feeders and others are making similar savings.

Investigate Prater Farm Mill Performance. Learn how you can increase your profits by decreasing your biggest operating expense—the cost of feed.

See your local dealer or power company.
Send to us for FREE catalog.

PRATER PULVERIZER CO.
Dept. K—817 West Washington Blvd., CHICAGO

THE MODERN FARM HOME HAS RUNNING WATER

And the selection of a pump or water system is of utmost importance, if you are to derive the greatest benefit and help from its installation. Experience has shown that it is poor economy to buy a pump too small for the maximum duties about the premises. Many modern country homes are now equipped with two automatic electric systems—one for soft water under pressure, for bath room and other general use about the home and tenant house—the other for spring or well water for barn, stock and houses.

Also a vital factor in satisfactory trouble-free service and low maintenance cost, is a pump mechanically suitable for the most exacting requirements. The Burks Super Turbine is such a pump. Expert engineers have told us it is mechanically perfect. Has only one moving part—no friction bearing surfaces to wear, cause grief, necessitate replacement and expense—in fact there is no metal to metal contact of moving parts and *therefore no wear*. This wonderful piece of essential farm equipment is durable, reliable and efficient to the extreme.

DECATUR PUMP COMPANY
Decatur, Illinois

BURKS SUPER-TURBINE PUMPS
Only one moving part
"A Life-Time of SERVICE"

Please send me descriptive literature on Burks Super Turbine Pumps.

Name .....

Address .....

5 Horse Power Type RS Single Phase Motor

Save Many Back-Breaking Hours

For more than 25 years, the reliability of Century Type RS Single Phase Motors has been demonstrated in many hundred thousand applications in all parts of the world... driving factory, home and farm equipment—doing much to make work easier.

CENTURY ELECTRIC CO.
1806 Pine St. St. Louis, Mo.

40 U. S. and Canadian stock points and more than 75 outside thereof.

Century MOTORS

tained on six different incubators in connection with the Iowa Project on Rural Electrification. It was indeed a revelation to observe how well these machines operated. The accompanying table will show exactly what results were obtained. The hatching percentages in all cases were excellent. Most of the machines operated during two seasons and, contrary to general supposition, the few interruptions of electric service which occurred apparently had no effect on the succes of the hatches. It was found, however, that the location of the incubator had a great effect upon the energy consumed. If located in a warm room, or at least one which is insulated, or without draft, an electric incubator can be much more economically operated.

The owners of all these machines were very enthusiastic about their results and would not consider any other method of obtaining their baby chicks.

Eastern Farmers Are Reducing Drudgery

By GEORGE T. DOLD

BURLINGTON County, New Jersey is one of the most progressive farming communities in the United States. In value of its farm products, it ranks sixth among all the counties of the Nation, and its farmers are alive to every thing that increases production, cuts down expense and makes for greater efficiency.

As might be expected under these circumstances, electricity is extensively used on Burlington farms and believing that the opinion of those who have profited through its use will be of general interest everywhere, I put this question to two of Burlington County's leading agriculturists:

"What has electricity done for you and your neighbors, and to what extent do you intend to use it in the future?"

Mr. Thomas Harvey of Columbus has a dairy farm, supporting a herd of some 175 pure bred Jerseys. He has shipped his milk to one concern for more than

The *Original* Immersed Type Farm Milk Cooling System

As originators of immersed type milk cooling with electric refrigerating machinery, we have developed the Haven System to a maximum degree of simplicity and efficiency.

The Haven Machine can be used for dry storage of either bottled or bulk milk, (with or without surface coolers). Supplied with or without tanks, as desired.

Suitable for a range of capacities, to take care of the requirements of the smallest to the largest farm demands.

Write for Bulletin "B" which describes the Haven Farm Milk Cooling System in detail.

(A few good dealer territories still open)

HAVEN MANUFACTURING CO.
Milwaukee, Wis.

The *Surge* Milker

Of course, The Surge can be electrically operated! Write today—learn *how little* it costs to equip The Surge for "high-line" current.

New Way to Milk Cows

The Surge milks cows like no other machine ever milked cows before. Develops wonderful NEW milking action. Milks cows other machines can't. And—because The Surge is the *only* machine with NO Long Tubes — NO claws—it is much easier to wash and produces clean, premium-priced milk with less work, less expense than *any* other milking machine. Investigate this wonderful milking machine TODAY!

FREE *Demonstration*

Write today for our Free Demonstration and Easy Terms Offer. We don't ask you to buy *anything* UNTIL we have actually *proved*—right in your own barn with your own cows—that The Surge will milk all your cows faster, cleaner and better, and save you more time and money than *any* other milking machine. Isn't that a fair offer?

Send for Free Catalog

Write us now for free Surge catalog and full details of our Free Demonstration and *Easy Terms* Offer. Mail coupon now —before this special offer is withdrawn.

Pine Tree Milking Machine Co.
Dept. 55-15 2843 W. 19th St., Chicago, Ill.

Pine Tree Milking Machine Co.
Dept. 55-15 2843 W. 19th St., Chicago

Please send me your FREE Surge Catalog and without cost or obligation, tell me about your special FREE Demonstration and EASY TERMS Offer on the wonderful Surge Milker.

(Please give this information)

No. cows milked.....R. F. D.....

Name .....

Address.....State .....

Sherman Borden Farm in Burlington County, N. J.

forty-five years and has never missed a daily delivery. He uses electricity on his farm for lighting his house and farm buildings; for pumping water, both for house use and for use in the cow barn, where each cow has its own drinking cup; for refrigerating milk as well as the household food supply; for operating motors used in driving straw, wood and ensilage cutting machines, etc.

Mr. Harvey is entirely satisfied with electricity as a farm aid and his prediction is that both small and large dairy farmers are beginning more fully to realize the advantages of electric service, and that irrespective of original investment required, they will come to regard electric service as a means of saving time and money.

Mr. Sherman Borden is President of the Burlington County Agricultural Society and is active in farm cooperation work throughout southern New Jersey. He is one of the country's largest fruit and truck growers and his farm is a model of what a farm should be.

Mr. Borden says: "Electricity on the farm is a Godsend, and I simply could not do without it. It is here when I want it, Sunday night or Monday morning, and even during the busy season, when we work night and day to make our fruit shipments on time, it does not tire, get out of order, or quit and go to town. In substituting motor driven fruit graders and other apparatus for manual labor the results have been far beyond what I ever expected.

"I read the very interesting articles in *Electricity on the Farm* and have taken particular notice that it is often possible to motorize the farmers' present equipment with but little added expense.

"Of course, as you know, in addition to lighting in my home, we use electricity for cooking, washing and mangle ironing, cleaning and a lot of other jimracks that the folks use. In fact, Christmas Eve I was quite surprised to find that my boy had lighted up with colored lamps a cedar tree we have on the lawn."

Farm Buildings of Thomas Harvey near Columbus, N. J.

A Bevan Electric Pumper

will solve your pumping problem. This pumper comes completely assembled, mounted on a wood platform, enclosed in a weatherproof cabinet and can be installed at your well in a few minutes time.

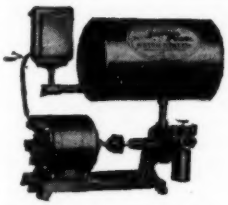
Equipped with Automobile Roller Bearings

Connect a Bevan Automatic Fresh Water System in your pipeline and enjoy fresh, running water wherever required. Open a faucet and your pumper starts delivering fresh water direct from the well. No storage tank required.

All Bevan Pump Jacks and Electric Pumpers are equipped with the same type of Roller Bearings as are used in automobiles. They are economical on power and will outwear plain bearings many times over.

Write for prices and specifications.

Acme Machine Co.
2901 Fremont Ave., So.
Minneapolis, Minn.



ONLY $58

for the completely automatic water system shown here. Ideal for shallow wells and cisterns where water is within 22 ft. of the surface. Only two moving parts.

Many other sizes and styles of water systems, also septic tanks, water softeners, stock drinking cups, etc. Write for complete descriptive literature.

MILWAUKEE AIR POWER PUMP COMPANY
8 Keefe Ave., Milwaukee, Wis.

Blue Ribbon Electric Milker

A Portable Milker Requiring No Installation

The "Blue Ribbon" is a self-contained milker, requiring no pipe lines or extra equipment of any kind. It operates direct from the light socket of either high line or farm light plant. A beautiful catalog and complete information will be sent on request. Write us today.

Electric Products Corporation
7 Bluff Ave., La Grange, Ill.

The New **CHALLENGER** *Model*

PETERSIME

ELECTRIC INCUBATOR

The amazing answer to the question thousands of hatcherymen must now consider—"What is today's Best Incubator Value?" Complete details of these great new bottom hatching Challenger Models are given in the new 1929-30 Petersime Year Book—"The Challenger"—just off the press. Your copy, FREE, upon receipt of your request. Write TODAY.

WELLINGTON J. SMITH CO., 936 Davis-Farley Bldg., Cleveland, Ohio

A REMARKABLE WATER SYSTEM VALUE!

The Duro Fresh Flow, Automatic, Electric Water System has a capacity of 250 gallons per hour, and costs only $69.50 f.o.b. Dayton. It supplies fresh water direct from the well at all times. Completely automatic in operation. See it at your Duro dealers shop. Write to us for catalog. Choose Duro—without a fault.

THE DURO COMPANY
537 E. Monument Ave., Dayton, Ohio

DURO
Automatic Water Systems

Electric Farm Alarm

FOUR purpose alarm, warns you in case of burglary, fire, failure of highline current or change in brooder temperature. Protects one or all buildings. Uses dry cells or highline current. Closed circuit principle—rings if wires are cut, shorted or tampered with. Cannot be beaten in any known way. No buried wires—simple to install and economical to operate.

Sold under money-back guarantee

SAFEGUARD ALARM CO., INC.
Council Bluffs, Iowa

OAKES ELECTRIC BROODERS

Raise Healthy Chicks This Sure, Easy Way

Here's the latest. It's economical, automatic, fumeless, safe and sure.

Four Sizes—100 to 650 Chicks

Cat. No.	Size	Chick Capac.	Wt.	Each
G-90	22-in.	100 Chicks	15 lbs.	$10.50
G-91	32-in.	250 "	35 lbs.	16.00
G-92	42-in.	425 "	70 lbs.	20.00
G-920	52-in.	650 "	100 lbs.	24.00

Sold by electric appliance and poultry supply dealers or public utility companies. Write us for literature.

Oakes Mfg. Co., 77 D. St., Tipton, Ind.

Dairy Sterilizers

(*Continued from page* 17)

said, "When I first started this milk business, I used three kerosene stoves under a tank, used for water heater and sterilizer. I lighted the stoves at 4 in the morning, but it was 8 o'clock before the water was hot enough for washing the bottles.

"I would then draw off all but about three inches of water, which was used to create steam for sterilizing. I could sterilize only three cases at once, and this took a lot of time. I also spent a half hour a day cleaning burners and filling the oil stoves. Then, there was sometimes soot from smoking burners, and always danger of fire.

"Since installing the electric equipment I save much time each day, as I can sterilize all my bottles at once. The work is done

CLASSIFIED ADVERTISING

INVESTIGATE the proven records of economical operation and success of the LYON IMPROVED ELECTRIC BROODERS. Send for free authentic information and reports on electric brooding. Also ALARMS, Power-off, Temperature, Burglar, Heating & Thermostatic Supplies. Interesting circulars on modern poultry equipment upon request. Lyon Electric Co., Dept. FF, Box 1436, San Diego, Calif.

FOR SALE—New Lighting Equipment designs now ready. All modern decorative effects at Reasonable Prices. Mail layout of rooms and we will submit free suggestions with our latest catalog. "Rural Homes Dept." CHAPMAN LIGHTING STUDIOS, 610 West Lake St., Chicago.

more conveniently, and certainly we have no soot and smoke to contend with, or fire hazard to worry about.

"Operating expenses have been reduced $2.80 per month, as the coal oil cost $10 per month while the electric bill to do the same work is $7.20 per month,—counting nothing for the great amount of time and labor saved.

Few dairymen any place can equal the quality milk produced by Mr. W. J. Knutzen, President of the Skagit County Dairy Association, and member of the Washington State Legislature, who lives near Burlington, Washington.

The milk from Mr. Knutzen's 65 Guernsey cows often has only 1000 bacteria per cubic centimeter, and sometimes as low as 400.

Low Bacteria Count

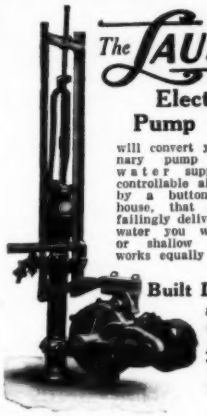
That is a remarkable record. And it is made with milking machines, too. We often hear that low bacteria content records cannot be made when using a milking machine. But Mr. Knutzen's experience, as well as many others, has disproved this contention.

On Mr. Kuntzen's dairy, the cows and the barns are kept clean with plenty of water furnished by an electric pumping plant. The milk is cooled immediately after coming from the cows, by cold water pumped through an aerator.

Sterilize Utensils

But the next factor, certainly of equal importance with clean barns and cooling milk, is that all the utensils are thoroughly sterilized. And an electric sterilizer is used to do it.

We well realize that milk producers, as a whole, over the United States are not being paid for milk and cream on a quality basis. This condition should be changed. But, regardless of how they are paid, most dairymen have a pride in putting out the best product consistent with economical management, and electricity is proving its worth far beyond expectations as an aid in accomplishing such results.



The LAUSON
Electric Pump Jack

will convert your ordinary pump into a water supply unit, controllable all weather by a button in the house, that will unfailingly deliver all the water you want—deep or shallow well, it works equally well.

Built Like a High Grade Auto Transmission

Machine cut hardened gears, fully enclosed, running in oil. Bronze bearings. No chains or sprockets. High grade motor. Compare with all others. Write for special literature and prices.

Also complete Water Systems

THE JOHN LAUSON MFG. CO.
700 Michigan St., New Holstein, Wis.

Clipping and Grooming Machines
with direct-connected motor

The Gillette Portable Electric Clipping and Grooming Machines appeals to every progressive farmer, because of its reliability. Attached to ordinary lamp socket either 32 or 110 V., it is instantly ready for work. Hanging or Pedestal types.

DEALERS — Send for attractive price list.

Gillette Clipping Machine Co., Inc.
129 W. 31st St. Dept. 11 New York City

Use Your Washing Machine to Freeze Ice Cream

Pure, rich ice cream at home with a Freez-E-Z when you want it. No work turning a freezer if you have a modern washing machine.

See your nearest washing machine dealer or write.

COLE MANUFACTURING CO.
BIRMINGHAM, ALA.

What Our Readers Say

Fireless Cooker Next

In the near future we hope to utilize electricity more extensively, and the first thing it is going to do in the house is to provide a fireless cooker before the summer. An electric range and vacuum cleaner are next.

Mrs. D. C. Bostwick,
Ardmore, Okla.

* * *

Range Appreciated

An electric range is the most beloved of my electric labor savers, as it saves much time for my husband in cutting and splitting wood, and I can prepare a whole meal in the oven and go to the field or garden, while my range cooks, just as well as though I were here to watch it.

Mrs. Milo Pettengill,
Wixom, Mich.

* * *

All the Year Round

Electricity is now doing my washing, ironing, sewing and cooking; sweeps my floors, cleans my mattresses, cools my rooms when too hot and circulates the air when cold and the furnace is balky, gives ideal lighting, keeps me posted and entertained with the radio, warns me of chicken thieves in the night, and at Christmas furnishes soft shaded light for my tree with no fire hazard. It runs my incubators, heats my brooders, wakens my laying hens earlier, and I imagine all the above things will be possible by remote control while I travel about.

Mrs. Blanche D. Madigan,
Maple Lake, Minn.

* * *

Water for House and Barn

I have been a reader of your monthly magazine for one year or more and it certainly is a fine magazine. It gives so many sketches that are beneficial to the farmers. I also intend to use electricity for running water, for my house and barn. I am also going to install an electric milking machine. I think electricity is one of the finest things a farmer can have.

Mrs. Octavie Mosbey,
Tell City, Ind.

Anticipate Many Uses

For the past five months we have been receiving electric service from the Kansas Power and Light Company. We are now using electricity for lights in the home, poultry house, cattle shed, barn-yard, and garage. It also does the washing and ironing. As our pocket-book permits, we expect to add the following equipment about in the order named: pressure water systems for the house and stock, modern toilet system, large motor for feed-grinding, etc., electric incubators, electric range, electric refrigerator. We like to let this "hired man" do the work and expect to keep adding to the chores he has to do.

Mr. Howard O. Wetzel,
Burlingame, Kans.

* * *

Real Progress

We enjoy your magazine very much, because information about electricity is very necessary, and is not easily obtained. We live on a large 190 acre farm in Westmoreland Co., Pa.; we came here just a year ago. We had no conveniences at all, with the exception of city water. We had the electric line run in from a street car line near by, we have our house and barn both electrified. We have a large twelve room house, almost a hundred years old; we painted it white and green with green shutters and since we have electricity it seems years younger. We have a washer, iron and sweeper and in the summer I use an electric hot plate. I am thinking of getting an electric range. We have a large family of five girls, and three boys, and electricity makes living certainly worth while for them. We have a large barn, 16 head of cattle; and as our boys are in High School, we do our evening barn work when they return from school, and the electricity through the barn certainly is a great help. Oil lanterns are very dangerous, and for a very small sum we are having a wonderful convenience without any danger. Your suggestions are always helpful; we expect to install a milk cooler in the spring, and perhaps a grinder in the barn.

Mrs. Albert E. Phillips,
Pleasant Unity, Pa.